

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Zuhua ZHU, et al.

Serial No. : 09/927,802

Group Art Unit: 288
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Technology Center 2600

Date Filed : August 10, 2001

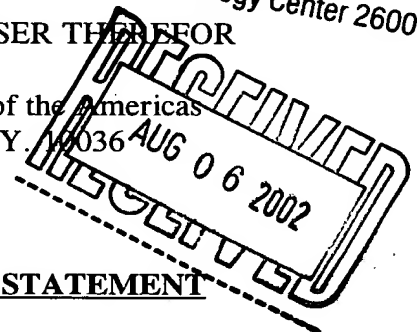
Examiner:



OPTICAL COMMUNICATIONS SYSTEM AND
VERTICAL CAVITY SURFACE EMITTING LASER THEREFOR

1185 Avenue of the Americas
New York, N.Y. 10036

Assistant Commissioner for Patents
Washington, D.C. 20231



SECOND SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

The information listed in the attached form PTO-1449 is brought to the attention of the Examiner. Copies of the information identified herein are also provided.

It is respectfully requested that the information cited in annexed Form PTO-1449 be considered by the Examiner in connection with the above-identified patent application, and that such art be made of record in said application.

The citation of the listed items is not a representation that they constitute a complete exhaustive listing of the relevant art or that these items are prior art. The items listed are submitted in good faith, but are not intended to substitute for the Examiner's search. It is hoped, however, that in addition to apprising the Examiner of the particular items, they will assist in identifying fields of search and in making as full and complete a search as possible.

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I hereby certify that this paper is being deposited this date with the U.S. Postal Service as first class mail addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Ivan S. Kavrukov

July 22, 2002

Ivan S. Kavrukov
Reg. No. 25,161

Date

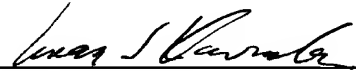
The filing of this Information Disclosure Statement is not an admission that the information cited herein is, or is considered to be, material to patentability as defined in 37 C.F.R. §1.56(b).

To the best of Applicant(s) knowledge, this Information Disclosure Statement is being filed before the date of mailing of a first Office Action on the merits in connection with this case.

The Office is hereby authorized to charge any fees that may be required for consideration of this Information Disclosure Statement and to credit any overpayment to our Deposit Account No. 03-3125.

Early and favorable consideration of the case is respectfully requested.

Respectfully submitted,



Ivan S. Kavrukov
Registration No. 25,161
Attorney for Applicants
Cooper & Dunham LLP
Tel. (212) 278-0400

Form PTO-1449

U.S. Department of Commerce
Patent and Trademark OfficeAtty. Docket N .
0980/65686Serial No.
09/927,802INFORMATION DISCLOSURE CITATION
BY APPLICANT

(Use several sheets if necessary)

Applicant
Zuhua Zhu, et al.Filing Date
August 10, 2001Group
2881

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number							Date	Name	Class	Subclass	Filing Date if Appropriate
	AA	5	2	8	3	4	4	7	02/01/94	Olbright et al.			
	AB	5	4	8	2	8	9	1	01/09/96	Shieh et al.			
	AC	5	5	4	7	8	9	8	08/20/96	Grodzinski et al.			
	AD	5	5	5	7	6	2	7	09/17/96	Scheider, Jr. et al.			
	AE	5	6	5	4	2	2	8	08/05/97	Shieh et al.			
	AF	5	6	6	1	0	7	5	08/26/97	Grodzinski et al.			
	AG	5	7	1	2	8	6	5	01/27/98	Chow et al.			
	AH	5	7	1	9	8	9	2	02/17/98	Jiang et al.			
	AI	5	7	1	9	8	9	4	02/17/98	Jewell et al.			
	AJ	5	7	1	9	8	9	5	02/17/98	Jewell et al.			
	AK	5	7	4	2	6	3	0	04/21/98	Jiang et al.			

FOREIGN PATENT DOCUMENTS

		Document Number							Date	Country	Class	Subclass	Translation	
													Yes	No
	AL	1	0	2	6	7	9	8	08/09/00	Europe				
	AM													
	AN													
	AO													

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

AP	Anan, T. et. al., "Room temperature pulsed operation of GaAsSb/GaAs vertical-cavity surface-emitting lasers", Electronics Letters, vol.35, pp.903-904 (1999).
AQ	Babic, "Double-fused 1.52um vertical-cavity lasers," Appl. Phys. Lett., vol.66, p.1030 (1995).

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AA	5 8 3 5 5 2 1	11/10/98	Ramdani et al.			
AB	5 8 3 8 7 0 7	11/17/98	Ramdani et al.			
AC	5 9 4 3 3 5 7	08/24/99	Lebby et al.			
AD	5 9 5 6 3 6 3	09/21/99	Lebby et al.			
AE	5 9 6 0 0 1 8	09/28/99	Jewell et al.			
AF	5 9 6 0 0 2 4	09/28/99	Li et al.			
AG	5 9 7 4 0 7 1	10/26/99	Jiang et al.			
AH	6 0 2 1 1 4 6	02/01/00	Jiang et al.			
AI	6 0 2 1 1 4 7	02/01/00	Jiang et al.			
AJ	6 0 6 1 3 8 0	05/09/00	Jiang et al.			
AK	6 0 9 1 7 5 4	07/18/00	Jiang et al.			

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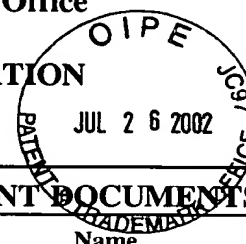
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

AP	Bhattacharya, P. et. al., "A 1.55 μ m Pattered Vertical Cavity Laser With Mismatched Mirrors," LEOS Newsletter, pp. 4-6 (August 1999).
AQ	Cheng and Dutta, eds., <i>Vertical-Cavity Surface-Emitting Lasers: Technology and Applications, Vol. 10 of Optoelectronic Properties of Semiconductors and Superlattices</i> , Manasreh, ed., Gordon and Breach Science Publishers (2000).
AR	Choquette, K.D. et. al., "Coupled Resonator Vertical Cavity Laser Diodes," LEOS Newsletter, pp. 6-7 (August 1999).
AS	Chua et. al., "Planar laterally oxidized vertical-cavity lasers for low threshold high density top surface emitting arrays", IEEE Photonics Technology Letters., vol. 9, pp. 1060-1061, (1997).

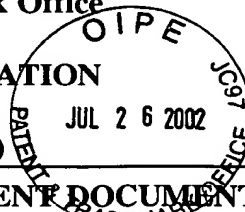
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U.S. PATENT DOCUMENTS								
Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate	
	AA	6 1 2 1 0 6 8	09/18/00	Ramdani et al.				
	AB	6 1 6 0 8 3 3	12/12/00	Floyd et al.				
	AC	6 1 7 7 3 5 9	01/23/01	Chen et al.				
	AD	6 1 8 5 2 4 1	02/06/01	Sun				
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							Yes	No
	AN							
	AO							
	AP							
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)								
	AQ	Dutton, Understanding <i>Optical Communications</i> (Prentice Hall 1998), at pp. 159-161.						
	AR	Ell, C. et. al. "Toward Quantum Entanglement in a Quantum-Dot Nanocavity," LEOS Newsletter, pp. 8-9 (August 1999).						
	AS	Hall, E., et. al., "Epitaxial Long Wavelength DBRs on InP: AlAsSb or Lateral Oxidation," LEOS Newsletter, pp. 10-11 (August 1999).						
	AT	Jayaraman, V. et. al. "Uniform threshold current, continuous wave, single-mode 1300nm vertical cavity lasers from 0-70C," Electronics Letters., vol.34, pp.1405-1407, (1998).						
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	AO						
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
	AP	Jayaraman, V. et. al., "High Temperature 1300 nm VCSELs for Single-Mode Fiber-Optic Communications," LEOS Newsletter, pp. 11-12 (August 1999).					
	AQ	Kondow, M. et. al., "GaInAsN: A novel material for long wavelength range laser diodes with excellent high-temperature performance", et al, Japan J. Appl. Phys., vol.35, p.1273-1275, (1996).					
	AR	Kung, P. et. al., "Lateral epitaxial overgrowth of GaN films on sapphire and silicon substrates," Applied Physics Letters, Vol. 74, No. 4, pp. 570-2 (1999).					
	AS	Laser Components GmbH, "Specdilas V-Series Single-Mode Laserdiode Low Threshold Current," 2-page technical specification document, Laser Components GmbH, Olching, Germany (June 2000).					
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
	AP	Lei, C. et. al. "ZnSe/CaF ₂ quarter wave Bragg reflector for the vertical-cavity surface-emitting laser," J. Appl. Phys., vol.69, pp.7430-7434 (1991).					
	AQ	Lei, C. et. al., "Manufacturing of Oxide VCSEL at Hewlett-Packard," LEOS Newsletter, pp. 12-13 (August 1999).					
	AR	Naone, R.L. et. al., "Tapered-Apertures for High-Efficiency Miniature VCSELs," LEOS Newsletter, pp. 13-14 (August 1999).					
	AS	Naritsuka, S. et. al., "InP layer grown on (001) Silicon substrate by epitaxial lateral overgrowth" Jpn. J. Appl. Phys. Vol. 34, pp. L1432-L1435 (1995).					
	AT	Ohmachi, Y. et. al., "GaAs/Ge Crystal growth on Si and SiO ₂ substrates," Mat. Res. Soc. Symposium Proc. Vol. 67, pp. 63-75 (1986).					
	AU	Park, J., " Lateral overgrowth and epitaxial lift-off of InP by halide vapor-phase epitaxy," J. Crystal Growth, vol.187, pp.185-193 (1998).					
	AV	Sale, T.E., <i>Vertical Cavity Surface Emitting Lasers</i> , Wiley & Sons (1995).					
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	AO						
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
	AP	Sun, Y. "Temporally resolved growth of InP in the openings of off-orientation from [110] direction," 2000 International Conference on Indium Phosphide and Related Materials, pp. 227-230 (2000) (abstract only).					
	AQ	Uchiyama, S. et. al., "Continuous-Wave Operation up to 36C of 1.3 μm GaInAsP-InP Vertical-Cavity Surface-Emitting Lasers," IEEE Photonics Technology Letters, Vol. 9, No. 2, pp. 141-2 (February 1997).					
	AR	Zah, C.E., "High-performance uncooled 1.3um AlxGayIn1-x-yAs/InP strained-layer quantum-well lasers for subscriber loop applications," IEEE J. Quantum Electron., vol.30, pp.511-523 (1994).					
	AS	Zilko, "Effect of mesa shape on the planarity of InP regrowths performed by atmospheric pressure and low pressure selective metalorganic vapor phase epitaxy," J. Crystal Growth, vol. 109, pp. 264-271 (1991).					
	AT						
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